



Rehabilitation Engineering Research Center for
Wireless Technologies

VIA ECFS

June 19, 2008

Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, S.W.
TW-A325
Washington D.C. 20554

Re: *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands (WT Docket No. 06-150); Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band (PS Docket No. 06-229).*

Dear Ms. Dortch:

Enclosed for filing in the above referenced Second Further Notice of Proposed Rulemaking proceedings are comments of the Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC).

Should you have any questions concerning this filing, please do not hesitate to contact me via phone (404-385-4640) or e-mail (helena.mitchell@cacp.gatech.edu).

Respectfully submitted,

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(Wireless RERC)
Executive Director
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Enclosure

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Service Rules for the 698-746, 747-762)	WT Docket No. 06-150
and 777-792 MHz Bands)	
)	
Implementing a Nationwide, Broadband,)	PS Docket No. 06-229
Interoperable Public Safety Network in)	
the 700 MHz Band)	

**COMMENTS OF
REHABILITATION ENGINEERING RESEARCH CENTER FOR
WIRELESS TECHNOLOGIES (WIRELESS RERC)**

The Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC), hereby submits comments to the Second Further Notice of Proposed Rulemaking (“Second Further Notice”) in the above-referenced proceedings released on May 14, 2008.

The Wireless RERC¹ is a research center focused on promoting equitable access to and use of wireless technologies by people with disabilities and on encouraging the application of Universal Design practices in future generations of wireless technologies.

¹ The Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC) is sponsored by the National Institute on Disability and Rehabilitation Research (NIDRR) of the U.S. Department of Education under grant number H133E060061. The opinions contained in this paper are those of the authors and do not necessarily reflect those of the U.S. Department of Education or NIDRR.

The Second Further Notice seeks comments on numerous revisions to the establishment of a mandatory public/private partnership (the 700 MHz Public/Private Partnership) in the upper portions of the 698-806 MHz band (the 700 MHz Band) to promote the deployment of a nationwide, interoperable broadband public safety network to serve public safety and homeland security needs. The Wireless RERC addresses its comments to specific items within WT Docket No. 06-150 and PS Docket No. 06-229 endorsing the deployment of the national interoperable wireless broadband network, and the availability of a full range of applications and services to users of the network for the delivery of emergency information that is accessible to the public, including persons with disabilities.

Eligible Users of the Public Safety Spectrum in the Shared Network (¶¶ 33-34)

The Wireless RERC believes given the importance of a Shared Wireless Broadband Network (SWBN) there must be coordination and planning among all affected parties. The establishment of a Federal Interagency Committee on Emergency Communications Systems (FICECS)²

² Joint Advisory Committee on Communications Capabilities of Emergency Medical and Public Health Care Facilities, Report to Congress, February 4, 2008, pp. 63-64, (JAC Report”). The JAC Report proposes the participation of the Departments of Homeland Security, Health and Human Services, Transportation, Commerce, the Federal Communications Commission, and the Centers for Disease Control in the FICECS. The US Department of Homeland Security’s Office of Interoperability and Compatibility and Office of Emergency Communications (USDHS OIC and OEC) would administer the FICECS

to (a) develop a coordinated strategy for migrating the nation's public safety systems to a new broadband interoperable network, and (b) develop strong, consistent guidance to states and localities to ensure all systems are migrating toward the same common interoperable national network is strongly recommended.

Provisions Regarding the Public Safety Broadband Licensee (§41)

The Wireless RERC submits that important factors weighed by local public safety agencies, when deciding to migrate their communications operations to the national broadband network, are budgetary resources to finance equipment, training, and planning. Two suggested options that could serve to incentivize the migration are: (1) authorizing and appropriating by Congress of emergency management grants to fund planning for the migration; and (2) aggregating abandoned frequencies upon the migration, re-auctioning spectrum and allocating a portion of the auction funds to finance the migration of local public safety operations to the nationwide broadband network.

Role of State Governments (§ 52)

The proposed FICECS should coordinate its development of any strategic public safety migration plan with guidance from State Emergency Communications Committees (SECCs) and Local Emergency Communications Committees (LECCs). These committees are responsible for organizing, and implementing detailed, current state communications plans³. The committee chairs verified that plans ensured emergency personnel were knowledgeable of agencies and personnel to contact, detailed activation and operation plans and how best to ensure safety of life and property.⁴ This approach comports with new federal funding priorities shifting towards emergency response planning, and citizen preparedness.⁵

In an earlier FCC proceeding on the Emergency Alert System (EAS)⁶ EAS officials recognized the role of state and local emergency agencies⁷ in the creation of sound emergency communications plans.⁸ In that proceeding, the Wireless RERC stated that plans including information on how best to assist individuals with disabilities during emergency evacuations increased the understanding of the accessibility concerns of this population and

³ During the late 1980's and early 1990's the FCC brought together State and Local chairs to discuss ways to improve emergency alerts and emergency preparedness. This comment is documented as part of those proceedings.

⁴ See FCC website, Enforcement Bureau, EAS Rules and Regulations, and SECC and LECC 1990's EBS chair meetings.

⁵ "New FEMA Funding Priorities; Inside A Mobile Command Center" at http://www.govtech.com/gt/print_article.php?id=366287, June 3, 2008.

⁶ *In the Matter of Review of the Emergency Alert System* EB Docket No. 04-296 (Released November 10, 2005). See comments of the Wireless RERC filed January 23, 2006.

⁷ *In the Matter of Review of the Emergency Alert System* EB Docket No. 04-296 (Released August 12, 2004). See comments of the Wireless RERC filed October 29, 2004.

⁸ See FCC website, Enforcement Bureau, EAS Rules and Regulations, and SECC and LECC 1990's EBS chair meetings.

contributed to reduced loss of life.⁹ Recent review of publicly available state and local EAS plans by the Wireless RERC revealed that only one plan included notification procedures for sending emergency alerts to persons with disabilities. Inclusion of the above-referenced factors in the development of the strategic migration plan by the proposed FICECS will facilitate coordinated emergency response and citizen preparedness, especially for persons with disabilities.

Technical Requirements for the Shared Wireless Broadband Network (§§ 61 - 63)

The Wireless RERC believes that the uncertainty of the technical network specifications, and the mandatory negotiation and implementation of these terms in the post-auction Network Sharing Agreement (NSA) were obligations, which both influenced and impeded, the odds of a commercial entity to bid above the established reserve price in the auction for the D Block license. We recommend that, in lieu of the D Block licensee and Public Safety Broadband licensee negotiating the technical specifications at the post-auction NSA stage, the Commission should adopt technical network

⁹ See Wireless RERC comments at page 6.

guidelines relying on existing global standards¹⁰, and public comments filed in this proceeding.

Requirements for the license should be worked out prior to the spectrum re-auction so that potential bidders are aware of their exact commitments, and the time frame for their delivery. Signal coverage should be based on geographic area, not population, to ensure that currently unserved areas are included in the network. The types of services and/or applications public safety will employ, and the quality of service and network capacity to be provided by the commercial operator are other technical factors to be resolved. Certainty of licensing and network requirements will more likely attract a commercial bidder in the re-auction of the D-block license.

In that regard, the Wireless RERC supports the inclusion of wireless applications and services that are accessible to people with disabilities in the expansion of the operational capabilities of the shared wireless broadband network (SWBN). Design and implementation of appropriate user interfaces, availability of a range of wireless devices capable of receiving public safety emergency communications, and compatibility of wireless carriers operations on the SWBN to deliver emergency information via cell broadcasting and SMS messaging to digital wireless devices are important elements for

¹⁰ *Report on GSC12 (Global Standards Collaboration) meeting (Kobe, Japan), July 8-13, 2007*, International Telecommunications Union.

integration into the SWBN. This approach would ensure the provision of new and evolving Internet Protocol (IP)-based wireless public safety communication services to all populations including people with disabilities.

The Wireless RERC suggests that there is a need for a set of dedicated frequencies to be used to transmit Next Generation EAS Common Alerting Protocol (EAS/CAP) messages. The Commission could allocate these dedicated frequencies for “experimental” use to test the EAS/CAP message distribution process. The Wireless RERC notes that the Commission has previously allocated specific frequencies on a secondary basis in the VHF band for use as communications links between authorized public warning locations and broadcast stations. The links were used to provide emergency alerts and information. Supplying dedicated frequencies for experimentation and testing of EAS/CAP emergency messaging would support the migration effort by providing the capacity for proof of concept projects prior to acquisition and deployment. This approach may serve to alleviate apprehension on the part of public safety agencies about abandoning their legacy systems.

Hearing aid compatibility of Commercial Mobile Radio Service (CMRS) devices continues to be a challenge for the millions of Americans who use some form of hearing enhancement technology. The Commission has led the

way in developing rules to ensure that CMRS devices are becoming more compatible with hearing aids. The extension of CMRS service into the 700 MHz shared public/private bands brings new bandwidth not currently covered by the ANSI C63.19 standards currently used to test compatibility between CMRS devices and hearing aids. In its First Report and Order on the Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets adopted on February 26, 2008, WT Docket No. 07-250, the Commission again delegated to the Chief, Wireless Telecommunications Bureau, and the Chief, Office of Engineering and Technology, the authority to jointly adopt future versions of the ANSI C63.19 standard to the extent that the changes to the standard do not raise major compliance issues¹¹. The Wireless RERC urges the Commission to encourage ANSI to rapidly complete development of new versions of the standard for these additional spectrum bands to ensure that the community of hearing aid users is not left unable to access these new devices.

Circumstances Constituting an "Emergency" (§§ 86-87)

¹¹ **First Report and Order**, Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets, http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-68A1.pdf

The Wireless RERC recommends that the Commission consider harmonizing its definition of “emergency” with terms, noted below, used in the Public Alert and Warning System, Executive Order No. 13407, 71 Fed. Reg. 36975 (Jun. 26, 2006). Therein, the President noted that it was the “policy of the United States to have an effective, reliable, integrated, flexible, and comprehensive system to alert and warn the American people in situations of war, terrorist attack, natural disaster, or other hazards to public safety and well-being . . .” (emphasis added.)

In its Commercial Mobile Alert System First Report and Order decision,¹² the Commission adopted three alert classes which complied with the intent of The Warning, Alert and Response Act (WARN Act)¹³ requiring the Commission to enable an “emergency” alerting system. Those three alert classes are: (1) Presidential Alert; (2) Imminent Threat Alert; and (3) Child Abduction Emergency or AMBER Alert.¹⁴

The Wireless RERC proposes that the Imminent Threat and Presidential alerts categories be added to the list of “emergency” definitions

¹² The Commercial Mobile Alert System, First report and Order (PS Docket No. 07-287), released April 9, 2008.

¹³ Section 602(b)(2)(e)

¹⁴ Each class is defined as follows: Presidential Alerts - national emergency-related alerts delivered to the American public; Imminent Threat Alerts – alerts with information on emergencies that may pose imminent risk to people’s lives or well-being; Child Abduction Emergency/AMBER Alerts – alerts related to missing or endangered children due to an abduction or runaway situation.

outlined in the rulemaking when initiating public safety priority access to the SWBN. The Second Further Notice identified the following situations: (1) “The issuance of an evacuation order by the President or state governor[s] [as emergencies often cross state borders] impacting areas of significant scope”; (2) “The occurrence of other major natural disasters, such as tornado strikes, tsunamis, earthquakes, or pandemics”; and (3) “The occurrence of manmade disasters or acts of terrorism of a substantial nature.” Reference to the terms “significant” and “substantial” in the preceding definitions require either further clarification or deletion. Parties negotiating the NSA must consider these proposed and other emergency scenarios when configuring network capacity. Accordingly, the Wireless RERC submits that public safety priority access should be limited to the geographic area affected by the emergency. A hurricane in Florida, for example, should not trigger public safety priority access to the network in California. Network users should be admonished and/or penalized against frivolous activation of an emergency.

Network Service Fees (§132)

The Wireless RERC recommends consideration of the proper balancing of public safety and commercial interests when establishing network service fees. In the first instance, a cap on fees paid by public safety to utilize the spectrum could be implemented. Funding to subsidize any cost differential

incurred by the commercial licensee to maintain the system to meet public safety requirements could be sourced from either funds appropriated by Congress, federal grants, or a cost-recovery fund should be identified and established.

Negotiation of the Network Sharing Agreement (§138)

The Wireless RERC submits that the “good faith” provision of the NSA is a vague, malleable phrase that overlays the negotiations of specific technical terms between public and private sector parties about obligations to public safety, and the SWBN. To avoid confusion in the interpretation and application of the “good faith” provision, and to ensure priority access of public safety to commercial spectrum during times of emergency, the Commission should adopt specific technical network specifications guidelines, and rules on the requirements of the 700 MHz Public/Private Partnership based on comments filed in this proceeding.

Reserve Price §§163-164

Given the record-breaking \$19 billion revenue received from the initial 700 MHz spectrum auction, the public benefit of a nationwide broadband interoperable public safety network is greater than the current need for revenue. Thus, the reserve price should be significantly reduced for the re-

auction of the D-Block license. The Wireless RERC is in accord with the following comment of Jon M. Peha: "...the US government would pay a subsidy to the winner in return for guaranteeing that public safety needs would be met.¹⁵" While Peha's comment refers to the reserve price, it can equally be applied to network service fees, and to the principle of shared investment by federal agencies in financing the operation of the SWBN.

Other Rules and Conditions (§187)

Comprehensive communications interoperability systems that facilitate coordinated interagency response through use of common signaling protocols for emergencies, and day-to-day operations have been designed, developed and deployed in the marketplace. These systems provide scalable solutions that encompass radio networks, Internet Protocol (IP) and non-IP networks, telephones, cell phones, and personal computers. They capitalize on existing communications networks and devices, and provide gateways to enable migration to IP networks and services. An open access network will allow public safety entities access to a variety of suppliers of IP-based communications equipment and systems capable of interconnecting with the nationwide wireless broadband interoperable network.

¹⁵ Peha, Jon M, *A "Successful" Policy for Public Safety Communications*. Comments Federal Communications Commission WT Docket No. 06-150 and PS Docket No. 06-229 (p.4), May 26, 2008.

The Wireless RERC recommends that consideration must be given to the security of an open access wireless network. While the advent of open systems interfaces has assisted the acceptance and deployment of networking technology, it has also seen a downside in that it has become easier to intrude on networks designed with such open features. Enhanced information systems require additional protections to ensure the security, reliability and integrity of the network.¹⁶ Default encryption built into open access networks may reduce significant security risks. The open access network will also ensure that the design and development of wireless devices for use by persons with disabilities enables the delivery of emergency information in a variety of accessible formats.

Alternative option to public/private partnership (§208)

In the event that the Commission decides to re-auction the D Block license without requiring a public/private partnership, the spectrum could be sold to the highest commercial bidder (with a set reserve price), and the auction proceeds be earmarked for the public safety community to contract for the build-out of its own nationwide infrastructure and subsequent negotiation of service contracts.

¹⁶ National Institute of Standards and Technology,
<http://csrc.nist.gov/publications/nistpubs/800-11/node24.html>.

In closing, the Wireless RERC wishes to reemphasize the importance of the deployment of a 700 MHz nationwide, interoperable public safety network and its provision of IP-based applications and services which enable the delivery of emergency communications accessible to the variety of wireless devices¹⁷ used by people with disabilities. It is also important to recall that the nationwide broadband interoperable public safety network is to serve the overall public interest.

Respectfully submitted,

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Dated this 19th day of June 2008

¹⁷ Executive Order: Individuals with Disabilities in Emergency Preparedness, rel'd. July 22, 2004. The Executive Order authorizes the Federal Government to facilitate cooperation among Federal, State, local and tribal governments, private organizations and individuals in the implementation of emergency preparedness plans as they related to individuals with disabilities.